

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-22. (Canceled)

23. (Original) A method of forming a shallow trench isolation structure on a silicon substrate having a plurality of trenches etched therein to define isolation regions and a plurality of masked regions on an upper surface of said substrate positioned between said isolation regions, said method comprising:

 exposing the substrate to an oxidizing ambient to create a thermal oxide layer within the trench;

 forming a layer of silicon oxide over the thermal oxide layer by alternating

 (i) introducing to the chamber a first gas consisting of one of a silicon-containing precursor gas and an oxidant,

 (ii) purging the first gas from the chamber,

 (iii) introducing to the chamber a second gas consisting of the other of the silicon-containing precursor gas and the oxidant,

 (iv) purging the second gas from the chamber, and

 (v) repeating steps (i) - (iv) until a desired thickness of the silicon oxide layer is achieved; and

 filling the trenches with chemical vapor deposited silicon oxide material.

24. (Original) The method of claim 23 wherein the silicon-containing precursor gas comprises tetraethylorthosilane (TEOS) and the oxidant comprises ozone.

25. (Original) The method of claim 23 wherein the silicon-containing precursor gas comprises SiCl_4 and the oxidant comprises steam (H_2O).

26. (Original) The method of claim 23 wherein the silicon-containing precursor gas comprises $\text{Si}(\text{NCO})_4$ and the oxidant comprises steam (H_2O).

27. (Original) The method of claim 23 wherein the silicon-containing precursor gas comprises $\text{CH}_3\text{OSi}(\text{NCO})_4$ and the oxidant comprises hydrogen peroxide (H_2O_2).